



QUALITY ASSURANCE

TFG PACKAGING MANUAL

TABLE TOP PRODUCTS





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THE PURPOSE OF THIS MANUAL

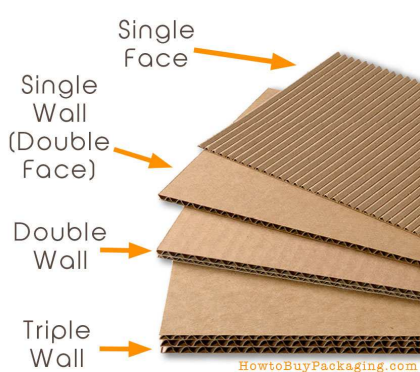
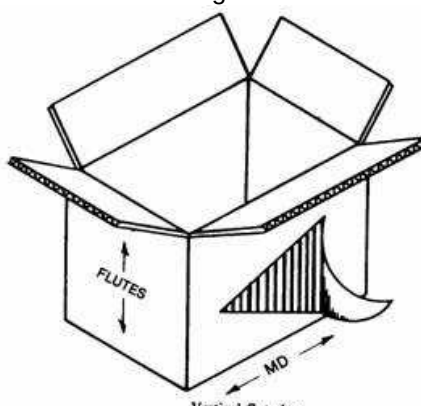
TO PROVIDE BEST PACKAGING PRACTICES FOR FRAGILE PRODUCTS



WHO BENEFITS FROM THIS MANUAL

- New suppliers
- Current suppliers

CONSTRUCTION OF CARDBOARD CARTONS

LAYERS		Cartons are made up of various layers Each layer is called a liner Carton walls are made up of flat liners and fluting	
FLUTING		Fluting consists of various grades to give the carton strength. Fluting is graded from "A" to "E". "A" fluting is more open. "A" fluting is "weaker" compared to "E" which gives the carton more strength. Fluting must run vertically to be most effective to give the carton extra strength.	
			
Weight	Liners are graded by weight, i.e.: Grams per meter square. EG:- 140 x 125 x 140 = 140 GSM x 125 GSM x 140 GSM		
Thickness	Cardboard construction is also divided into groups of "Double Wall & Single Wall" boards. Special cardboard "thickness" will be specified as per product requirement		
	Double Wall cardboard is constructed of 5 layers :	ie: 3 layers of Liners & 2 layers of Fluting:140 x 125 x 140 x 125 140	
	Single Wall cardboard is constructed of 3 layers:	ie: 2 layers of Liners & 1 layer of Fluting: 140 x 125 x 140.	
Cardboard Types	1)Virgin	New Materials	Stronger and less water absorbent. As cardboard absorbs water/moisture it becomes weaker.
	2)Recycled	Previously used cardboard	Not as strong as virgin cardboard.

PACKAGING MATERIALS

Corrugated Board	<u>Single faced corrugated:</u> A single corrugated medium and a liner. It is mainly used as a protective wrap.
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Single Face Corrugated



Single Wall (Double Faced) Corrugated



Double Wall Corrugated



Triple Wall Corrugated

Single wall or double faced board: A single corrugated medium between two liners. The centre can be formed into any flute height depending on the end use. It can be used to make box liners.

Double wall: Made up of three liner elements and two corrugated mediums. It is used in packaging of heavy products, bulk material, items which require the extra strength and puncture resistance.

Triple wall: The most complex and least used. It consists of 4 liners and 3 corrugated mediums. It is used where maximum stack strength and sidewall strength is required.

Cardboard dividers



Comprise of a single or double wall "B"-flute cardboard with ECT exceeding 4.4 kN/m or 25 lbs per inch width. To be as specified on specification sheet.

Polystyrene



Polystyrene adds additional cushioning within a carton to eliminate movement, and thus damage to fragile product. To be used at the top & bottom of cartons where necessary/as specified by Technologist.
Standard: 16 Kg / m² (max weight load) 10mm thick

Bubble Wrap



To be used at the top & bottom of cartons, or to be wrapped around product where necessary in order to add extra cushioning.

<u>Description</u>	<u>Bubble Height (mm)</u>
Standard Small Bubble	6
Large Bubbles	12

Aerothene 	Aerothene sheets are ideal for protecting breakables against damage. It can be used as a protective sheet at the bottom and top of cartons, or to be wrapped around fragile product as extra support.
Air pillows 	Air pillows are designed to protect product during transportation by filling empty spaces/gaps within cartons to secure product in order to eliminate unnecessary movement. This is an alternative option to Styrofoam.

INNER PACKAGING

The strength of the inner package is just as important as the strength of the master/outer carton. @home cartons are moved many times, thus the requirement for inner packaging to be strong enough to eliminate fragile product from breaking. Due to order quantities, inner packaging will often be removed from the master carton and transported on its own. This process is called fine picking.

GUIDELINES FOR INNER PACKAGING

General Guidelines for Glassware, Dinnerware, Serveware and Tea story Packaging

Glass products will vary greatly in size, shape and fragility. Even though there are a broad variety of possible designs for glassware, if the featured packaging guidelines are followed, product protection can be increased and damages can be decreased.

There are a few key topics that must be covered in order to create a proper package for these types of glass products:

- 1) Proper protection for glassware pieces
- 2) Extra packaging around the product
- 3) Space utilization

GLASSWARE

GLASSES

Protection for stemmed glasses

RED WINE GLASSES
 WHITE WINE GLASSES
 FLUTE GLASSES
 CHAMPAGNE GLASSES

No movement of glasses within box.

Full insert and each glass held by its own "tongue"



Double protection B-flute (if all-in-one to be E-flute) dividers in between glasses - inner packaging should be designed to separate each of the products into its own section of the box

Top flaps to meet in order to supply additional support

Top flaps to meet in order to supply additional support

4 Glasses per set when possible – Buyer to advise if a set of 4 or 6 is ordered.

If the design of the glass changes, the size of the box needs to be adjusted accordingly (REF NO TBC by Technologist)

Carton specifications: Single wall (double faced) with E-flute 220gsm

TUMBLERS



No movement of glasses within box.

Inner packaging should be designed to separate each of the products into its own section of the box

Flaps meeting in order to secure glasses within box

Carton specifications: Single wall with E-flute 220gsm

Protection for glasses without stems

BEER GLASSES



No movement of glasses within box. Inner packaging should be designed to separate each of the products into its own section of the box – B-flute dividers (or all in one carton)

Full insert and each glass held by its own “tongue”

Carton specifications: Single wall with “E”-flute 220gsm

DECANTER SET**Protection for decanter sets**

No movement of product within carton

Decanter to be properly wrapped with added protection - bubble wrap or liner board

Carton spec: Single wall with "E"-flute 220gsm

DINNERWARE**PLATES & DINNER SET PACKAGING****Protection for all plates and dinner sets**

A piece of single wall B-flute corrugated is placed between each item.

Ensure no movement of product within carton

Carton specs: Single wall with E-flute 220gsm

BOWLS**Protection for bowl sets**

Product not to be able to move

Carton not to be too small or big – to make sure that size of carton is correct size

Single faced corrugated board to be added inbetween product (square or die-cut)

Carton specs: Single wall with "E"-flute 220gsm

SERVEWARE	
PLATTERS	
Protection for standard platters	
 	Polystyrene at sides to fill carton (See photo).
	Standard platters: where more than one platter is packaged together – Corrugated board to be used in between to eliminate contact between two platters
	Carton weight should not exceed 16 Kg - 10mm Thick
	Carton specification: Single wall with E-flute 220gsm
	An alternative option to polystyrene is air pillows. See example on left.
Protection for integrate (difficult shape) platters	Integrate shape: packaged sample required for approval by Technologist prior to production
	Same requirements as per standard platter , but with additional protection
	It is critical that these platters are packaged separately
	Drop test is required in order to see which part of the platter requires special packaging
	Should there be additional spoons or a stand, bubble wrap to be added/wrapped around product for added protection

RAMEKINS

Protection for ramekins/snack bowls



Technologist will specify when product needs to be shrink wrapped together (see 2nd photo)

A piece of single wall B-flute corrugated is placed between each item.

Carton specs: Single wall with "E"-flute 220gsm

Make sure that ramekins/bowls are unable to move around (to be securely packed)

LARGE GLASS BOWLS

Protection for all glass bowls



In order to properly protect large glass bowls, they need to be individually boxed in their own carton, to prevent contact with other product.

It is suggested that the product is wrapped in any additional packaging. These wrapping materials include items such as tissue paper, bubble wrap and corrugated board. To be specified by Technologist.

Air pillows should be used around the product to fill space inside the inner package

Carton specs: Single wall with E-flute 220gsm

These areas need to be filled with packaging material such as air pillows or bubble wrap

CAKE STAND

Protection for cake stands



Styrofoam mould at bottom and top of cake stand required

Styrofoam: 16kg/m2 (max weight load) 10mm thick

No movement of product within carton – Carton not to be too big.



Carton specs: Single wall with E-flute 220gsm

Carton specs: Single wall with E-flute 220gsm

TEA STORY

MUGS

Protection for all mugs



Corrugated fluted board: Single wall "B"-flute board in between mugs for added protection

Liner boards (B-flute single wall) higher than mugs (5mm). Each alternate mug should be turned upside down.

Carton spec: Single wall with "E"-flute 220gsm

CUPS AND SAUCERS

Protection for all cups and saucers



Corrugated fluted board: Single wall "B"-flute board in between cups for added protection

Liner boards (B-flute single wall) higher than cups (5mm). Each alternate cup should be turned upside down.

Saucers are placed at the bottom of the box with single faced corrugated board in between and another liner board is placed on top of the top saucer to separate the saucers from the cups.

TEST REQUIREMENTS**(1) CARDBOARD REQUIREMENTS FOR MASTER/OUTER & INNERS**

<u>CARTON WEIGHT (max gross mass)</u>		<u>MIN EDGE CRUSH TEST VALUE (ECT)</u>	
Kg	LBS	kN/m	lbs per inch width
10	22	4.4	25
18	40	4.9	28
27	60	5.5	31
36	80	7.4	42
45	100	8.8	50
54	120	10.7	61

ECT TEST METHOD: FEFCO No.8 (European Federation of Corrugated Board Manufacturers)

(2) DROP TEST

At sample stage, and when conducting inspections, the Carton Drop test is critical to ensure that product will be secure. By testing how durable the box is, you can see how the cartons themselves will hold up during shipment and what potential damage could be done to the products inside. The test is based off of the ISTA (International Safe Transit Association) standard.

Carton drop test process:

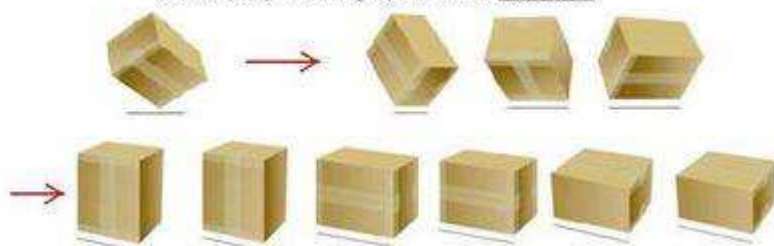
- The products must be checked for defects before testing to ensure normal functionality and packaging.
- Using the chart below, determine what height your products should be dropped from:

Package Weight	Drop Height
1-9 Kg	76 cm
10-18 Kg	61 cm
19-27 Kg	46 cm
28-45 Kg	30 cm
46-68 Kg	20 cm

- 10 Different drop options including dropping the box on its corners, edges and face indicated below.



One corner, three edges, six faces 一角三边六面



DROP TEST RESULTS:

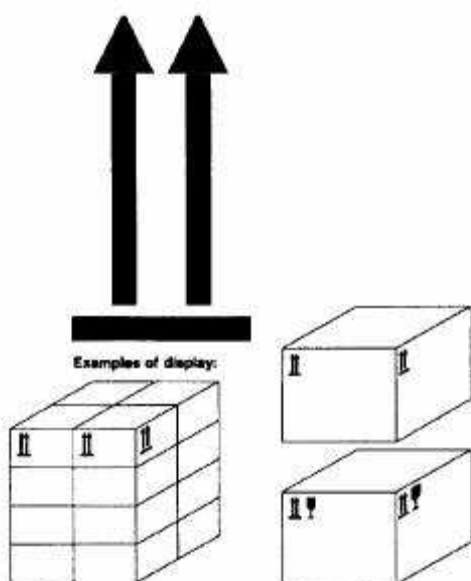
Pass	No damage or breakage to packaging. No functionality or safety issues found with the product.
Fail	Product is damaged or broken or safety issues, such as sharp edges or small loose parts, are revealed after testing.
Pending	Packaging including outer carton, inner boxes or unit packaging are damaged, but the product remains in tact.

PHOTO BOX SPECIFICATIONS

Varnish reference	Matt aqueous varnish (water based)
Cardboard Specifications	E-Flute double wall 220gsm (Kraft board)
Topsheet	36% density for top sheet
Base	TIT/H Lock Base
Printing	Full colour litho: black, cyan, magenta and yellow followed by matt aqueous varnish 20% cyan screen with 100% solid black area to achieve a deep black Picture resolution: 300 dpi
ECT Test requirement	Weight dependant (see relevant table)

FRAGILE SIGN

All fragile items must have a printed "**FRAGILE**" sign in bold red printed on all 4 sides of the inner and outer carton. The size of the font for the outer carton must be a minimum of 2.5 cm in height. The inner carton can have labels 10mm in height. **ARROW INDICATION TO BE FOLLOWED** in order to make sure that cartons are not delivered on its side or upside down.



RED TAPE REQUIREMENT

Fragile cartons need to be sealed with **RED TAPE** in order for all that are part of the carton movement process, to treat these cartons with special care, in order to *eliminate breakages*.



Run on 96.2 cp cylinder 315.435

REQUIREMENTS FOR TABLETOP STOCK BUY ORDERS

All stock buy order cartons must be sealed with the **RED TAPE** to treat these cartons with special care, in order to *eliminate breakages*.

An additional **red** label needs to be added above the standard outer carton information. This label can be clear with red print or white with red print. Size to be 10cm in length and 5cm in width.

STOCK BUY ORDER